

REMARKS

In the Office Action dated February 21, 2003, typographical errors were noted at pages 5 and 8 of the specification, which have been corrected.

Informalities also were noted in claims 15 and 20-22, all of which have been corrected. The Examiner's assumptions regarding the intended meanings of those claims are correct. Claims 1-4, 6-8, 10-17 and 20-22 were rejected under 35 U.S.C. §102(b) as being anticipated by Bullock et al. This rejection is respectfully traversed for the following reasons.

First, the Examiner has made several statements in the detailed substantiation of this rejection at pages 3 and 4 of the Office Action, which Applicants respectfully submit are not appropriate for, and not relevant to, an anticipation rejection, but are more in the nature of statements that would be expected in the context of an obviousness rejection under 35 U.S.C. §103(a). For example, the Examiner cited language at column 4, lines 14-67 of the Bullock et al. reference, as teaching that "each of memories 16 and 28 includes both factory-written and printer-data values." The Examiner stated this "implies" warm-up values, such as temperature sense resistor calibration data. There is nothing in the statement cited by the Examiner that necessarily teaches that warm-up values are, or even can be, included in the factory-written and printer-data values. This is a conclusion that the Examiner has made without any substantiating evidence. More importantly, an anticipation rejection cannot be based on an "implication" allegedly present in a reference. For an anticipation rejection, the only criterion is whether the reference explicitly discloses the invention. Moreover, the disclosure must be enabling to a sufficient extent to provide evidence that the claimed invention, which

the reference allegedly anticipates, was placed in the possession of the public by the reference prior to the invention thereof by the inventors of the claims against which the reference is being applied.

Applicants respectfully submit that without any explicit mention whatsoever of warm-up data in the factory-written and printer-data values described in the Bullock et al. reference, the Bullock et al. reference does not provide a disclosure of such warm-up values, and therefore this by itself is sufficient to overcome the anticipation rejection of claim 1 based on the Bullock et al. reference.

Moreover, the Examiner stated that the Bullock et al. reference teaches “cartridge memory 28 and printhead memory 16 enable microprocessor 34 to calculate control values which enable printer 1 to maintain high quality print media output.” The Examiner stated this teaching “naturally suggests” warm-up data for a fast start for a current warm-up cycle as a means for the printer to maintain high quality print output. Again, a statement that a teaching “naturally suggests” a particular conclusion is not suitable as a basis for supporting an anticipation rejection. For the same reasons discussed above, Applicants do not agree that the teaching cited by the Examiner “naturally” suggests warm-up data, particularly in the absence of any mention or usage of warm-up data in the algorithm set forth in detail in the Bullock et al. reference. This is another reason, by itself, sufficient to overcome the anticipation rejection based on Bullock et al.

Additionally, Applicants respectfully submit the Examiner is incorrect in contending that the Bullock et al. reference teaches a sensor for measurement of ambient temperature. In the substantiation of the rejection of claim 1, the Examiner cited language at column 4, lines 1-13 as substantiation for the Bullock et al.

reference teaching a drive unit connected to an ink jet printhead for heating, measuring a temperature of, and driving the ink jet printhead. The Examiner also cited this same language (column 4, lines 4-6) as allegedly teaching a sensor for measurement of ambient temperature. The explicit language in this passage, however, states that a thermal sense sensor is positioned on the printhead and detects the temperature of the semiconductor substrate on which the heater resistors are positioned. This is clearly not an ambient temperature sensor, but is a sensor used to at least indirectly measure the temperature of the printhead or the circuit board on which the heater resistors are mounted.

In Figure 4 of the present application, sensor 2109 is the sensor which allows the drive unit to measure the temperature of the ink jet printhead, and a separate temperature sensor, 2119 also shown in Figure 4, is provided for determining the ambient temperature. This is described in the paragraph beginning at page 12, line 7 of the present specification.

The fact that the thermal sense resistor (referred to as the TSR in the Bullock et al. reference) does not measure ambient temperature is further substantiated by the detailed description of the algorithm in column 6 of the Bullock et al. reference. In that algorithm, the value T is explicitly defined as the *printhead* temperature, and is stated to be calculated from a formula that relates the printhead temperature to the TSR output. It is further stated that the TSR is monitored by the system to “infer” head temperature. Therefore, if the TSR is not a direct measurement of the head temperature, it is a measurement of a temperature at a location very close to the printhead from which (presumably by having knowledge of the relevant thermal transfer coefficients) the head temperature can be calculated. In any event, it is

clear that the output of the TSR is not and cannot be the ambient temperature, since there would be no accurate way to make a purely mathematical calculation of the temperature of the printhead by a measurement of ambient temperature. (Hence, the use of previously-obtained and stored predetermined condition in combination with the ambient temperature measurement in the subject matter of the present claims)

Aside from the absence of any disclosure of an ambient temperature sensor in the Bullock et al. reference, the described usage of the TSR in the Bullock et al. reference is evidence that the system described therein operates based on concepts that are completely different from the subject matter disclosed and claimed in the present application. The Bullock et al. reference operates by measuring, or calculating, the temperature of the printhead itself, and this value is used in the algorithm for operating the printhead. As noted above, there is no explicit teaching in the Bullock et al. reference that this operating algorithm proceeds any differently during warm-up than during normal usage. The subject matter disclosed and claimed in the present application rejects the conventional thinking of monitoring the temperature of the printhead itself for use as the primary regulating parameter, and instead monitors ambient temperature and uses the monitored ambient temperature, in combination with stored data, to regulate the temperature of the printhead during warm-up.

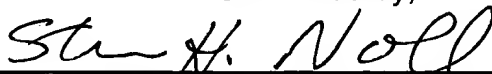
The Bullock et al. reference, therefore, does not disclose all of the elements of the arrangement of independent claim 1, nor all of the method steps of independent method claims 13 and 20, and therefore does not anticipate any of those claims. For the same reasons, the Bullock et al. reference does not anticipate any of the claims

respectively depending from those independent claims. Therefore, none of claims 1-4, 6-8, 10-17 or 20-22 is anticipated by the Bullock et al. reference.

Claims 5 and 9 were rejected under 35 U.S.C. §103(a) as being unpatentable over Bullock et al. in view of Berson. Claims 18, 19 and 23 were rejected under 35 U.S.C. §103(a) as being unpatentable over Bullock et al. in view of Hirabayashi et al. For the reasons discussed above with respect to the Bullock et al. reference, even if the Examiner is correct regarding the teachings of Berson and Hirabayashi et al., modifying the Bullock et al. system in accordance with those teachings still would not result in an arrangement of an apparatus as set forth the aforementioned dependent claims, since they respectively include the subject matter of the aforementioned independent claims. Moreover, neither the Berson nor the Hirabayashi et al. reference has anything whatsoever to do with regulating the warm-up cycle of an ink jet printhead, and therefore Applicants submit that a person of ordinary skill in the art would find no teaching, motivation or inducement in any of these references to modify the Bullock et al. reference for the purpose of assisting in the warm-up of an ink jet printhead. Applicants respectfully submit that after reading the present disclosure, the Examiner has located independent teachings in the prior art relating to certain of the dependent claims, but those teachings have no relevance whatsoever to regulating the warm-up of an ink jet printhead, and a person of ordinary skill in the art, who has not had the benefit of first reading the present disclosure, would find no reason to consult the Berson or Hirabayashi et al. references as a basis for solving problems in that field.

For the foregoing reasons, Applicants respectfully submit that all claims of the application are in condition for allowance, and early reconsideration of the application is respectfully requested.

Submitted by,



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